


**SERIES:** PSK-20B | **DESCRIPTION:** AC-DC POWER SUPPLY

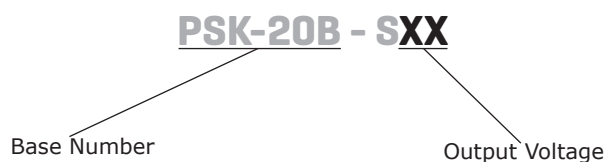
**FEATURES**

- up to 20 W continuous power
- universal input: 85~264 Vac
- compact encapsulated design
- single output from 5 Vdc ~ 48 Vdc
- short circuit, over voltage protection, over current protection
- 4000 Vac isolation
- no load power consumption <100 mW



| MODEL       | output voltage | output current | output power | ripple and noise <sup>1</sup> | efficiency |
|-------------|----------------|----------------|--------------|-------------------------------|------------|
|             | (Vdc)          | max (A)        | max (W)      | typ (mVp-p)                   | typ (%)    |
| PSK-20B-S5  | 5              | 3.5            | 17.5         | 100                           | 82.85      |
| PSK-20B-S9  | 9              | 2.1            | 18.9         | 100                           | 85.70      |
| PSK-20B-S12 | 12             | 1.6            | 19.2         | 120                           | 85.77      |
| PSK-20B-S15 | 15             | 1.3            | 19.5         | 150                           | 85.85      |
| PSK-20B-S24 | 24             | 0.85           | 20.4         | 240                           | 86.06      |
| PSK-20B-S48 | 48             | 0.42           | 20           | 480                           | 86.00      |

Notes: 1. At full load, nominal input, 20 MHz bandwidth oscilloscope, output terminated with 10  $\mu$ F electrolytic and 0.1  $\mu$ F ceramic capacitors.  
2. All specifications are measured at  $T_a=25^\circ\text{C}$ , nominal input voltage, and 75% rated output load unless otherwise specified.

**PART NUMBER KEY**


## INPUT

| parameter                 | conditions/description       | min       | typ | max        | units      |
|---------------------------|------------------------------|-----------|-----|------------|------------|
| voltage                   |                              | 85<br>120 |     | 264<br>370 | Vac<br>Vdc |
| frequency                 |                              | 47        |     | 63         | Hz         |
| current                   |                              |           |     | 0.5        | A          |
| inrush current            | at 240 Vac, 25°C, cold start |           |     | 70         | A          |
| leakage current           |                              |           |     | 0.25       | mA         |
| no load power consumption |                              |           |     | 0.10       | W          |

## OUTPUT

| parameter                  | conditions/description             | min | typ   | max   | units |
|----------------------------|------------------------------------|-----|-------|-------|-------|
| capacitive load            | 5 Vdc output model                 |     |       | 3,500 | μF    |
|                            | 9 Vdc output model                 |     |       | 2,100 | μF    |
|                            | 12 Vdc output model                |     |       | 1,600 | μF    |
|                            | 15 Vdc output model                |     |       | 1,300 | μF    |
|                            | 24 Vdc output model                |     |       | 850   | μF    |
|                            | 48 Vdc output model                |     |       | 420   | μF    |
| initial set point accuracy | at full load, 25°C                 |     | ±2    |       | %     |
| line regulation            | high line to low line at full load |     | ±0.5  |       | %     |
| load regulation            | 10%~100% load                      |     | ±1    |       | %     |
| hold-up time               | at 115 Vac                         |     | 12    |       | ms    |
| switching frequency        |                                    |     | 65    |       | kHz   |
| temperature coefficient    |                                    |     | ±0.05 |       | %/°C  |

## PROTECTIONS

| parameter                | conditions/description | min | typ | max | units |
|--------------------------|------------------------|-----|-----|-----|-------|
| over voltage protection  | hiccup, auto recovery  |     |     |     |       |
| over current protection  |                        | 110 |     |     | %     |
| short circuit protection | hiccup, auto recovery  |     |     |     |       |

## SAFETY & COMPLIANCE

| parameter         | conditions/description  | min     | typ   | max | units |
|-------------------|---|---------|-------|-----|-------|
| isolation voltage | input to output   |         | 4,000 |     | Vac   |
| safety approvals  | IEC62368-1/60950-1, UL62368-1/60950-1   |         |       |     |       |
| safety class      | class II  |         |       |     |       |
| EMI/EMC           | EN 55032 Class B, FCC Part 15 Class B, EN 61000-6-3, EN 61000-3-2, EN 61000-3-3, EN 55024, EN 61204-3, EN 61000-6-1 |         |       |     |       |
| MTBF              | as per MIL-STD-217F, at 115 Vac, 25°C, GB   | 300,000 |       |     | hours |
| life time         | at 40°C, 75% load   | 3       |       |     | years |
| RoHS              | yes   |         |       |     |       |

## ENVIRONMENTAL

| parameter             | conditions/description | min | typ  | max | units |
|-----------------------|------------------------|-----|------|-----|-------|
| operating temperature | see derating curve     | -25 |      | 70  | °C    |
| storage temperature   |                        | -40 |      | 85  | °C    |
| operating humidity    | non-condensing         |     |      | 93  | %     |
| operating altitude    |                        |     | 5000 |     | m     |

## SOLDERABILITY

| parameter      | conditions/description     | min | typ | max | units |
|----------------|----------------------------|-----|-----|-----|-------|
| wave soldering | see wave soldering profile |     |     | 260 | °C    |

- Notes:
1. Soldering materials: Sn/Cu/Ni
  2. Ramp up rate during preheat: 1.4°C/s (from 50°C to 100°C)
  3. Soaking temperature: 0.5°C/s (from 100°C to 130°C), 60±20 seconds
  4. Peak temperature: 260°C, above 250°C for 3~6 seconds
  5. Ramp down rate during cooling: -10°C/s (from 260°C to 150°C)



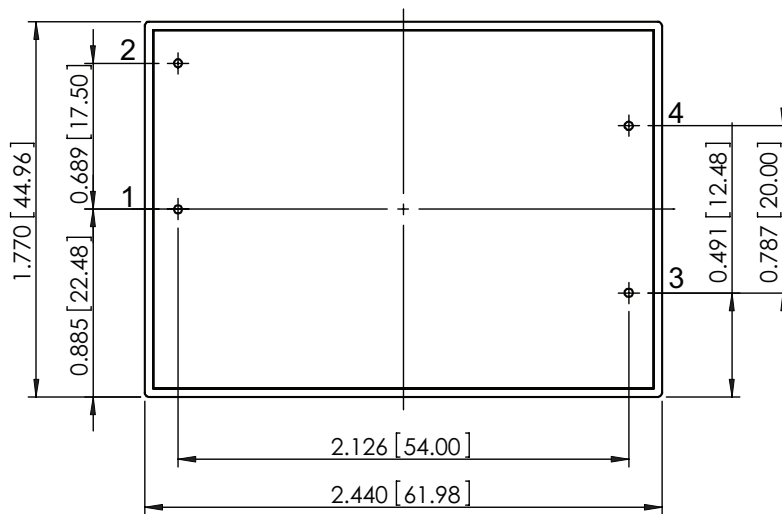
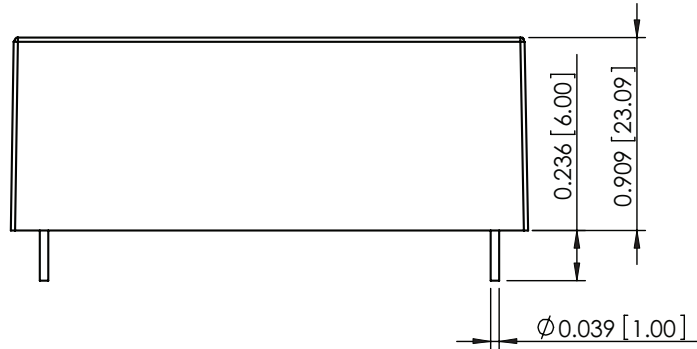
## MECHANICAL

| parameter  | conditions/description                           | min | typ | max | units |
|------------|--|-----|-----|-----|-------|
| dimensions | 2.440 x 1.770 x 0.909 (61.98 x 44.96 x 23.09 mm) |     |     |     | inch  |
| weight     |  |     | 106 |     | g     |
| cooling    | natural convection                               |     |     |     |       |

## MECHANICAL DRAWING

units: inch [mm]  
 tolerance: X.XXX = ±0.020 [±0.50]

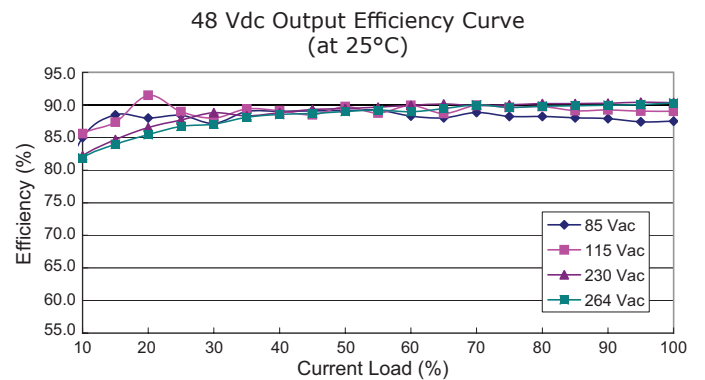
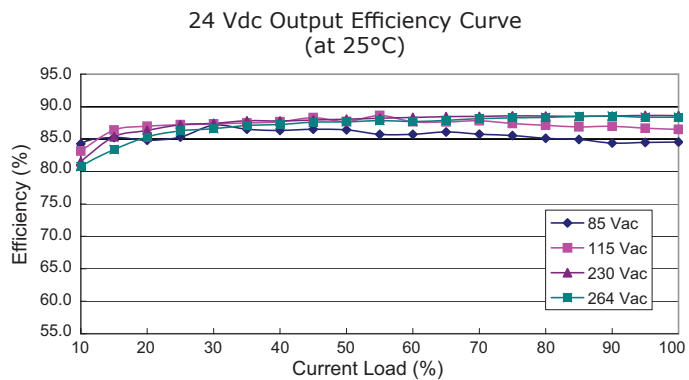
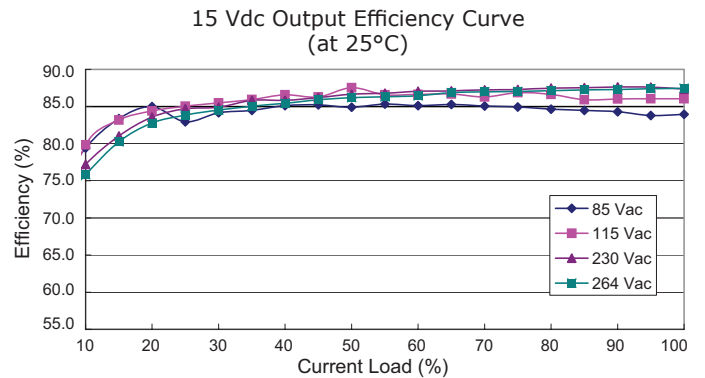
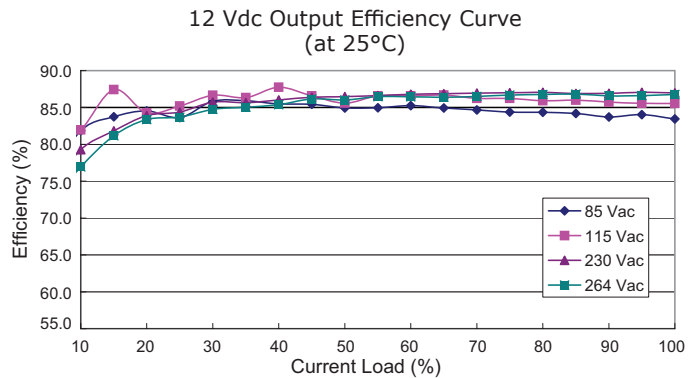
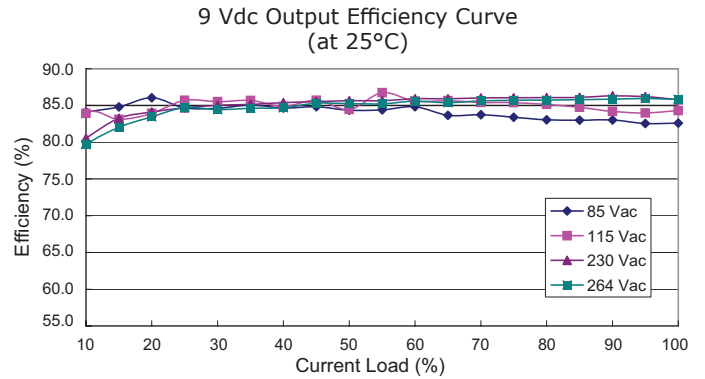
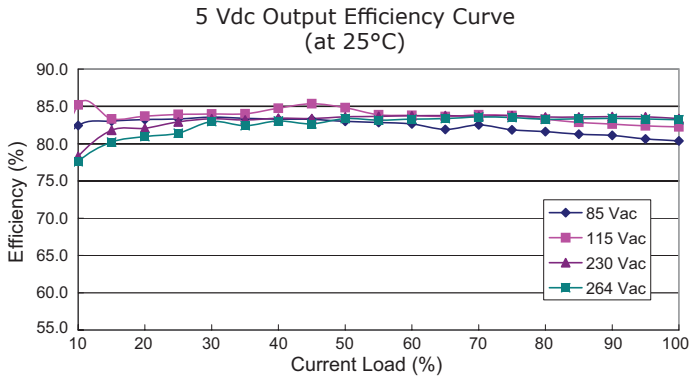
| PIN CONNECTIONS |          |
|-----------------|----------|
| PIN             | Function |
| 1               | ACN      |
| 2               | ACL      |
| 3               | -Vout    |
| 4               | +Vout    |



## DERATING CURVE



## EFFICIENCY CURVES



## REVISION HISTORY

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| rev. | description                  | date       |
|------|------------------------------|------------|
| 1.0  | initial release              | 02/23/2017 |
| 1.01 | increased operating altitude | 02/06/2018 |
| 1.02 | updated datasheet            | 01/08/2019 |

The revision history provided is for informational purposes only and is believed to be accurate.



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